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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,336	03/24/2004	William A. Peterson JR.	051252-5050-03	3493

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SEIMENS CORPORATION  
INTELLECTUAL PROPERTY DEPARTMENT  
170 WOOD AVENUE SOUTH  
ISELIN, NJ 08830

EXAMINER

MCGRAW, TREVOR EDWIN

ART UNIT

PAPER NUMBER

3752

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/807,336

**Applicant(s)**

PETERSON, WILLIAM A.

**Examiner**

Trevor E. McGraw

**Art Unit**

3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 16-27 is/are pending in the application.
- 4a) Of the above claim(s) 16-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 23-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Arndt et al (US 5,766,441).

In regard to Claim 23, Arndt et al teach a method of controlling a spray of fuel through at least one metering orifice of a fuel injector, the fuel injector having an inlet and an outlet and a passage extending along a longitudinal axis therethrough, the outlet having a seat and a metering disc, the seat having a seat orifice and a first channel surface extending obliquely to the longitudinal axis, the metering disc including a second channel surface confronting the first channel surface so as to provide a flow channel, the metering disc (23) having a plurality of metering orifices extending therethrough along the longitudinal axis and located about the longitudinal axis the method comprising locating all of the metering orifices (38) on a first virtual circle (see Figure 31 where "38" is shown on a virtual circle) outside of a second virtual circle formed by a virtual extension of a sealing surface of the seat (seat as shown in Figure 1) on the metering disc such that each of the metering orifices extends generally parallel to the longitudinal axis through the metering disc and imparting a radial velocity to the

fuel flowing from the seat orifice through the flow channel (channel between "36" and "38") so that fuel flows in transverse direction across and through the fuel metering orifices (38; see where flow travels transverse and out of "38" in Figures 4-8 and 10).

In regard to Claims 24-27, Arndt et al also teach where the locating of the metering orifices (38) includes spacing a first metering orifice (first "38" on virtual circle) at a first arcuate distance relative to a second metering orifice (second "38" on virtual circle) on the first virtual circle (as shown in Figure 31) and the imparting of a radial velocity to the fuel flow includes configuring the flow channel (channel between "36" and "38") to extend between a first position and a second position, the first position being located at a first distance (distance of "36" from axis) from the longitudinal axis and at a first spacing along the longitudinal axis relative to the second surface of the metering disc (bottom part of "23") and the second position being located at a second distance from the longitudinal axis and a second spacing along the longitudinal axis from the second surface of the metering disc (bottom part of "23"), such that a product of the first distance and first spacing is generally equal to a product of the second distance and a second spacing where the imparting increases and decreases the radial velocity between the seat orifice and each of the metering orifices (distances closer together increase the radial velocity and distances further apart decrease the radial velocity as shown in the Figures of Arndt et al).

### ***Response to Arguments***

#### **Rejection under 35 USC § 102**

Applicant's arguments with respect to claims 23-27 have been considered but are moot in view of the new ground(s) of rejection.

**Rejection under 35 USC § 112**

Applicant's arguments, see pages 11-12, filed 02/27/2007, with respect to the rejection of Claim 26 have been fully considered and are persuasive. The rejection of Claim 26 has been withdrawn in view of Applicant's explanation of the recited limitations as well as the correction of the typographical errors in Claims 25 and 27.

**Objection to Specification**

Applicant's arguments, see pages 11-12, filed 02/27/2007, with respect to the objection to the specification have been fully considered and are persuasive. The objection to the specification has been withdrawn in view of Applicant's explanation in pages 11-12 of the arguments.

**Information Disclosure Statement**

Applicant's arguments, see page 9, filed 02/27/2007, with respect to the objections to the information disclosure statement have been fully considered and are persuasive. The objection to the information disclosure statement has been withdrawn in view of the foreign patent and non-patent literature documents being provided in the co-pending parent Application.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Arndt et al (US 5,924,634).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trevor McGraw whose telephone number is (571) 272-7375. The examiner can normally be reached on Monday-Friday (2nd & 4th Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571) 272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/T. E. M./  
Examiner, Art Unit 3752

/Darren W Gorman/  
Primary Examiner, Art Unit 3752